

# Service-Instructions

## DELMONICO 1091-1221-981-2001

(22 512)

### I. Technical Data:

- Supply voltage: Only for 117 volts AC/60 cs.  
Tube complement: ECC 85(6AQ8), ECH 81(6AJ8), EF 89(6DA6), EABC 80(6AK8), EL 84(6BQ5),  
ECL 86(6GW8), EAM 86 (6GX8).  
selenium rectifier B 250 C 75.  
Fuse: 1.6 amps.  
Dial lamps: 2 each 7 volts/0.3 amps.

### II. Switch the set to push-pull operation (STEREO button released)

### III. Dial Pointer Adjustment:

Tune AM and FM drive to stop at the low frequency end and set both pointers to the corresponding reference marks on the dial.

### IV. Preparations for Alignment:

1. Set controls for full volume, full basses and full trebles with tonality button released.
2. Connect outputmeter reading 1.5 volts to terminals for ext. speaker.
3. Leave ferrite antenna inoperative.

### V. Alignment of IF transformers 472 kc:

Normally no adjustments are required as the circuits will hardly be detuned by themselves. However, if necessary adjust cores of IF transformer for max. deflection.

### VI. For alignment of IF rejector circuit, SW and MW ranges see IX Alignment Chart

### VII. Alignment of IF transformer 10.7 mc:

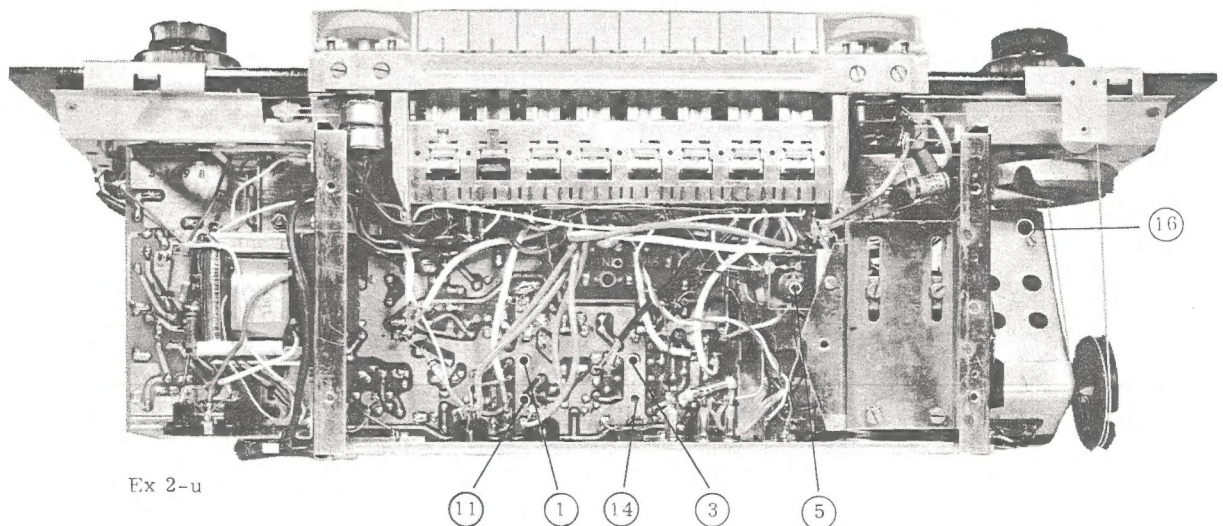
Set signal generator to 10.7 mc without modulation and maintain a 2 volts DC output of ratio detector during the alignment procedure.

Align according to IX Alignment Chart to ensure optimum symmetry of the IF response curve.

Attenuations should be made by a capacitor of 0.005 mf in series with a resistor of 5000 ohms.

### VIII. Alignment of VHF part:

1. Tune receiver to 94 mc.  
Apply an unmodulated signal of 94 mc and adjust capacitors of oscillator (17) intermediate (18) and radio frequency circuit (19) for max. deflection.
2. For neutralizing disconnect the lead to point 2 of VHF part temporarily. Neutralization is accomplished by alternate adjustments at points 18 and 20 until no better results may be obtained.  
Adjust at point 20 for min. deflection with minus 20 volts DC applied to point 2 of VHF part and adjust at point 18 for max. deflection without the DC voltage applied.  
Secure cores with wax after completing neutralization.



Ex 2-u

BV 4050

## IX. Alignment Chart

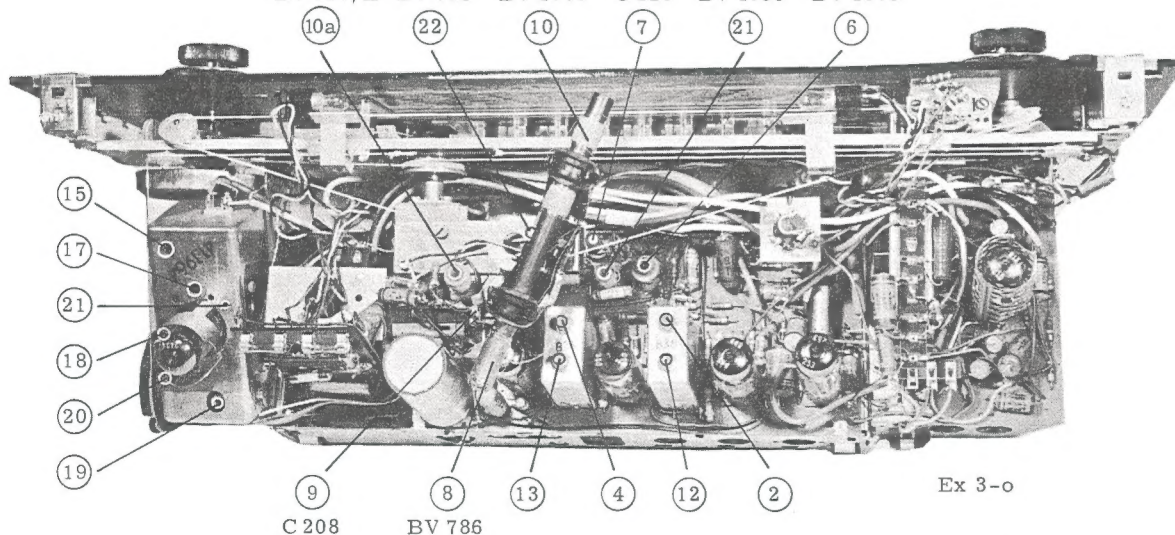
	Sig. Gen. Connection	Modulation	Range Button	Frequency		Alignment Points	Location	Adjust to	Measurement according to
				Sig. Gen.	Receiver				
AM	through artif. ant. to ant. and ground terminals	30 p.c.	MW	472 kc	560 kc	core 1 in BV 4087 core 2 in BV 4087 core 3 in BV 835 core 4 in BV 835	on bottom on top on bottom on top	Maximum	I
				472 kc	560 kc	core 5 in BV 4050	on top	Minimum	
				520 kc	520 kc	core 6 in BV 4070	on top	Maximum	II I II I Ia
				1600 kc	1600 kc	capacitor 7 (C 220)	on top		
				560 kc	560 kc	coil 8 in BV 786	on top		
				1600 kc	1600 kc	capacitor 9 (C 208)	on top		
			LW	200 kc	200 kc	coil 10 in BV 4079	on top		
				200 kc	200 kc	core 10a in BV 810/II	on top		
			SW	6 mc	6 mc	core 21 in BV 4055	on top		
				7 mc	7 mc	core 22 in BV 725	on top		
FM	through 0.005 mF to grid 1 of ECH 81	no mod.	FM	10.7 mc	99 mc	core 11 in BV 4087	on bottom	3 turns to the left	III
						grid circuit EF 89	G1 EF 89	attenuate	
						core 12 in BV 4087	on top	Maximum	
						core 14 in BV 835	on bottom	Maximum	
						grid circuit EF 89	G1 EF 89	remove atten.	
						plate circuit ECH 81	A(Hex)ECH 81	attenuate	
						plate circuit EF 89	A EF 89	attenuate	
						core 13 in BV 835	on top	Maximum	
						plate circuit ECH 81	A(Hex)ECH 81	remove atten.	
						plate circuit EF 89	A EF 89	remove atten.	
FM	radiated sig. on tube ECC85 (ungrounded shield)	no mod.	FM	10.7 mc	99 mc	core 15 VHF part	on top	3 turns to the left	III
FM	VHF ant. terminals	no mod.	FM	105 mc	105 mc	capacitor 17	on top	Maximum	
				99 mc	99 mc	capacitor 18	on top	Minimum	
				99 mc	99 mc	capacitor 20	on top	Maximum	
				99 mc	99 mc	core 19	on top		V
				98 mc	98 mc	core 21	on top		III

## Measurements:

- I. AC voltmeter reading 1.5 volts across terminals for ext. speaker.
- Ia. Idem and bandsread pointer set to zero when aligning SW range.
- II. As under I and positioning the coil with ferrite antenna operative.
- III. VTVM between joint of C 406/R 406 and ground.
- IV. 2 resistors of 100 000 ohms each in series between joint of C 406/R 406 and ground. VTVM between junction of resistors and joint R 403/C 402.
- V. As under III with abt. minus 20 volts DC applied to point 2 of VHF part and increased sig. gen. output.

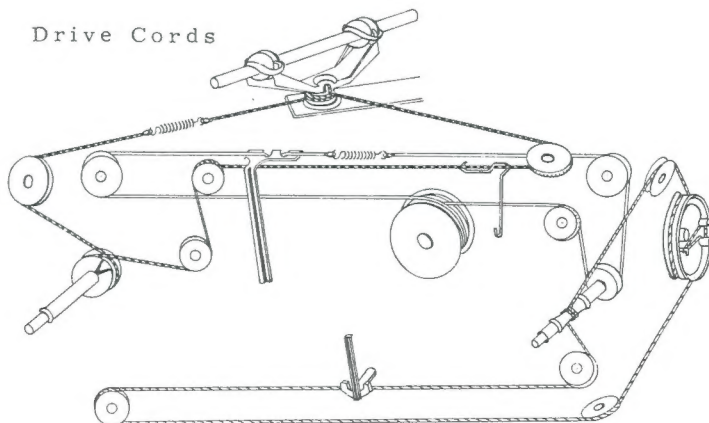
10616/3W

BV 810/II BV 725 BV 4079 C 220 BV 4055 BV 4070



Ex 3-o

Drive Cords





p. m.

Pos	Artikel	Beschreibung	Bauvorschrift	Hollerith Nummer	ZeichnungsNr	Brutto	Netto
		<u>HF- und Mischteil</u>					
	UKW-Mischteil	m.Rö.		2180 004	4-4244	31,20	
	Antennenplatte	gen.			4-4537	-,55	
	Drucktaster	ungeschaltet (Petrick)		2200 108	2-1028	18,90	
	Drucktaster	kompl.			22500,3	25,50	
	Ferritantenne	kompl.	BV 4054			6,50	
	Ferrispule	MW	BV 786			-,40	
	Ferrispule	LW	BV 720			-,30	
	UKW-Antennendrossel		BV 652			-,30	
	Sperrkreis	472 kHz (ZF-Sperrkreis)	BV 4050			2,10	
	Vorkreisspule	für Kurzwelle	BV 725			-,70	
	<del>Vorkreisspule</del>	<del>für Langwelle</del>	<del>BV 810/II</del>			1,-	
	Oszillatorspule	für Kurzwelle	BV 4055			-,65	
	Oszillatorspule	für Mittelwelle	BV 4070			-,75	
C 217	Drehkondensator	AM, Dau 207 Gi 5,66		1700 025	3-1576	7,45	
		<u>AM-FM-ZF Verst. u. Dem.</u>					
	ZF-Bandfilter		BV 835			4,80	
	Ratio-Filter		BV 4087			6,20	
		<u>NF-Teil</u>					
	Ausgangstrafo		BV 1163/II			5,75	
	Ausgangstrafo		BV 1163/III			5,75	
	Stereo-Platine	gedruckt		3852 043	3-1689	1,50	
	<del>ZF-NF-Platine</del>			3852 045	2-985	3,75	
	" " "	kompl. geschaltet			22500,22	55,90	
	Röhrenfassung	B 8.700.49 Valvo		2360 027		-,40	

[illegible]



[illegible]

# Gedruckte Schaltung für Rundfunkempfänger Printed Wiring for Radio Receivers Câblage Imprimé pour Récepteurs de Radio

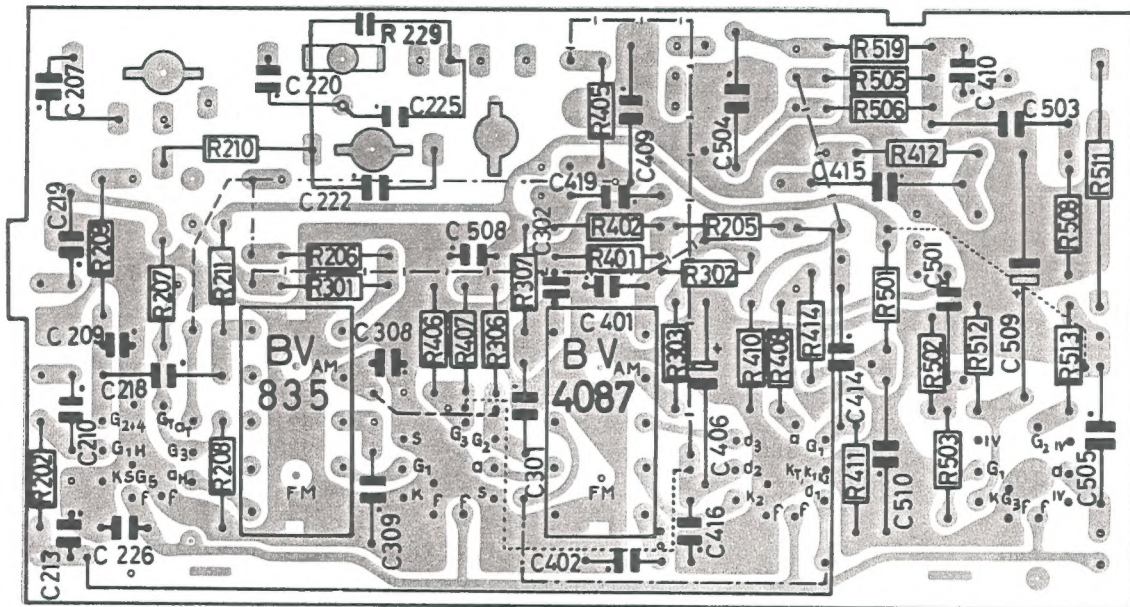
Type 22310, 22311, 22312, 22330, 22405, 22323,

Type 22506, 22510, 22511, 22512, 22513, 22514, 22515, 22516, 22520, 22530

PLATINE  
BOARD  
ZF-NF 2-985

Bestückungsseite  
Component Side - Côté Composants

BV 725 BV 4055 BV4070



ECH 81

EF 89

EABC80

EL 84

AD 3-1055/2

R 202 1 M					
R 205 2,2 M					
R 206 2,2 M					
R 207 100					
R 208 27 k					
R 209 47 k, 1 W					
R 210 33 k, 1 W					
R 211 1,8 k					
R 301 180 k					
R 302 2,2 M					
R 303 1,8 k					
R 306 82 k					
R 307 1,8 k					
R 401 270 k					
R 402 100 k					
R 405 15 M					
R 406 39 k					
R 407 4,7 M					
R 408 3,9 k					
R 410 390 *	entfällt	- not used			
	überbrückt	jumpered			
		non utilisé			
		pontage			
R 411 10 M					
R 412 1 M					
R 414 220 k					
R 501 100 k					
R 502 820 k					
R 503 100 k					
R 505 1 k					
R 506 1 k					
R 508 390					
R 511 1 k, 2 W	* 3,3 k				
R 512 200 *	entfällt	- not used			
		non utilisé			
R 513 220					
R 519 12 k					
C 207 56					
C 209 2800					
C 210 100					
C 213 0,047 $\mu$					
C 218 4700					
C 220 3...30					
C 221 15					
C 222 470					
C 225 470					
C 301 95					
C 302 2200					
C 401 330					
C 402 3300 * 39					
C 406 2 $\mu$					
C 409 0,01 $\mu$					
C 410 0,033 $\mu$	* entfällt	- not used			
		non utilisé			
C 414 0,022 $\mu$					
C 415 0,022 $\mu$					
C 416 4700					
C 419 330					
C 501 0,022 $\mu$					
C 503 0,1 $\mu$					
C 504 0,1 $\mu$	* 0,22 $\mu$				
C 505 3300					
C 508 4700					
C 509 50 $\mu$	* 100 $\mu$				
C 510 0,1 $\mu$					
C 219 39					
C 226 4700					
C 229 470					
C 308 2200					
C 309 16					

\* Änderungen bei den Geräten: } 22510, 22511, 22512  
Modifications for models: } 22513, 22520, 22530  
Modifications pour modèles: }

• Änderungen bei dem Gerät 22506  
Modifications for model 22506  
Modifications pour modèle 22506

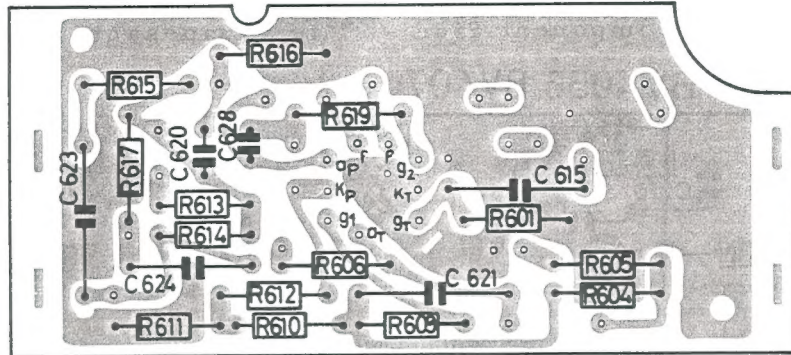
AD 4-1230/2

PLATINE STEREO  
STEREO BOARD  
3-1689

Nur für die Geräte-Typen: } 22506, 22510, 22511, 22512, 22514, 22515, 22516,  
Only for models: } 22513, 22520 und 22530  
Seulement pour modèles: }

Bestückungsseite  
Component Side - Côté Composants

ECL 86



AD 4-1204

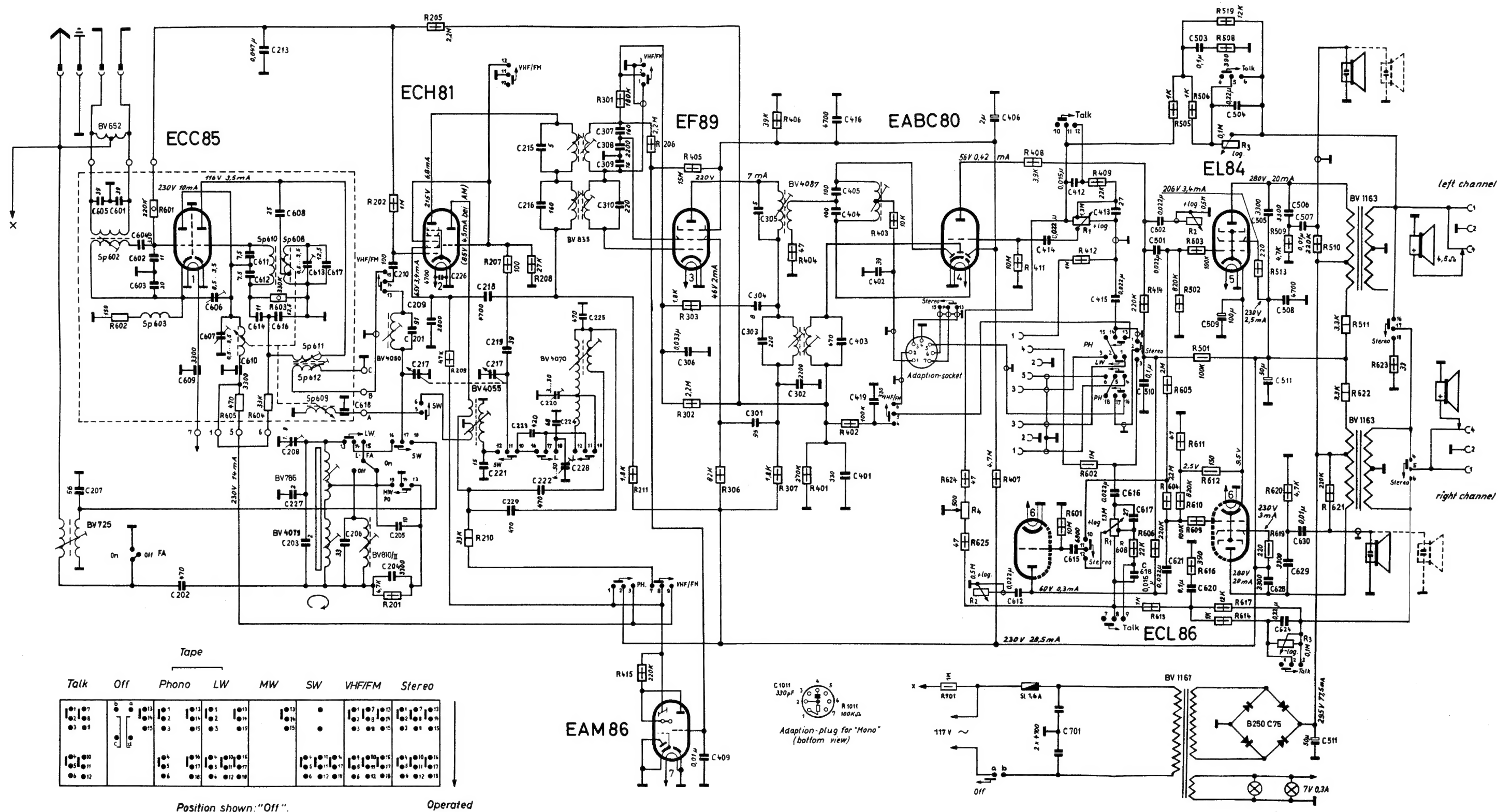
R 601 10 M  
R 604 2,2 M  
R 605 2 M  
R 606 220 k  
R 609 100 k  
R 610 820 k  
R 611 47  
R 612 150

R 613 1 k  
R 614 1 k  
R 615 470  
R 616 390  
R 617 12 k  
R 619 220

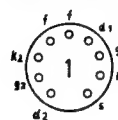
C 615 6800  
C 620 0,1  $\mu$   
C 621 0,022  $\mu$   
C 623 0,015  $\mu$   
\* C 624 0,22  $\mu$   
C 628 3300

\* bei Gerät 22520 u. 22530 C 624 0,1  $\mu$   
for model 22520 u. 22530 C 624 0,1  $\mu$   
pour modèle 22520 u. 22530 C 624 0,1  $\mu$

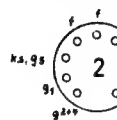




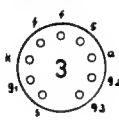
ECC 85



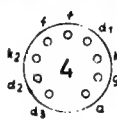
ECH81



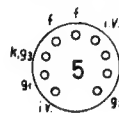
EF89



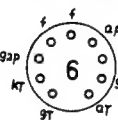
EABC 80



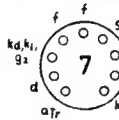
EL84



ECL86



EAM86



(tube sockets from below)

Voltages and currents checked with 1000ohms per volt moving coil meter in VHF/FM position without signal applied.

1091-1221-981-2001  
Delmonico

"Printed in Western Germany"

AD 1-1100b  
22512 66/667/669/676